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EXAMINER	
O BRIEN, JEFFREY D	

ART UNIT	PAPER NUMBER
3677	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,917	SATO ET AL.	
	Examiner	Art Unit	
	Jeffrey O'Brien	3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 June 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "5" has been used to designate both "coil spring" (Fig. 1) and "disc spring" (Fig. 4). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Figure 16 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because it appears to be a direct translation from a foreign language and is replete with errors and awkward language. Some of these errors include, but are not limited to:

4. Paragraph [0003], Lines 5-8

5. Paragraph [0004], Lines 5-7

6. The disclosure is objected to because of the following informalities:

7. Page 10, Line 21: "...(c) and (d) are side views." should be replaced with "...(d) and (e) are side views."

8. Page 13, Lines 18-19: due to the notation of numerals such as 17-1, the use of "15-24" to indicate two abutting surfaces (15 and 24) should be replaced with "15 with 24" so that the lines read "...abutting surfaces of 15 with 24, 15 with 16 and 18 with 19..." in order to avoid confusion.

9. Page 13, Line 25: "potion" should be replaced with "portion"

10. Not all paragraphs are numbered in Applicant's disclosure.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. For Claims 3 and 4, the term "and/or" is indefinite. For purposes of examination, Examiner has taken this to mean "or".

14. For Claim 8, "a penetrably holed shaft" is believed to be the same penetrably holed shaft from claim 1 and should be replaced with "the penetrably holed shaft". For purposes of examination, this has been interpreted to be the same penetrably holed shaft of claim 1.

15. For Claim 10, the term "another member" is indefinite as it does not indicate which member it is referring to. For purposes of examination this is taken to mean that it would be a bottom member of the case 6.

16. For Claims 1-12, the claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors. Applicant is encouraged to closely review all claims. Phrases such as those found in Claim 12 "...the device chassis is designed easily" is considered vague and holds little patentable weight. Appropriate correction is required.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 1-6 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003304316 herein referred to as '316 in view of Tseng et al. (US 6,587,333) herein referred to as '333. (US 7,158,816 which claims foreign priority to the Japanese application of JP 2003304316 has been used as an approximate English translation of the Japanese document).

19. For Claim 1, '316 teaches a two-shaft hinge having a rotation shaft (Fig. 3: 312) and an opening/closing shaft (Fig. 5: 321), comprising: a rotation torque unit (Fig. 3) in which a plurality of rotation torque generating portions are provided on the rotation shaft, the rotation torque generating portion being assembled by putting a coil spring (Fig. 3: 315) around an outer periphery of the rotation shaft (312) and by abutting a fixing cam (313a, 313b) and a rotating cam (314a, 314b) on both ends of the coil spring (315); and an opening/closing torque unit (Fig. 4) in which a plurality of opening/closing torque generating portions are provided on the opening/closing shaft (321), the opening/closing torque generating portion being assembled by putting a coil spring (325) around the opening/closing shaft (321) and by abutting a fixing cam (323) and a rotating cam (324) on one end of the coil spring; wherein, the two-shaft hinge has a two-shaft structure in which an axial direction of the rotation shaft and an axial direction of the opening/closing shaft are assembled to a hinge housing to be perpendicular to each other (Fig. 2), the torque units which generate a sliding torque and a click torque at rotation and opening/closing operation function on the rotation shaft and the

opening/closing shaft, and the opening/closing torque unit is assembled to either side or both right and left sides of the rotation torque unit. '316 does not teach the fixing cam and rotating cam on both ends of the coil spring for the opening/closing shaft. '316 does however teach the use of a fixing cam and rotating cam on both ends of the coil spring for the rotating shaft. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to comprise a plurality of fixing cam and rotating cam elements on both ends of the coil spring, as it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.* See also, MPEP § 2144.05. However, '316 does not teach the rotation shaft having a penetrating hole. '333 teaches a hinge (Fig. 4) having a rotation shaft (33) having a penetrating hole (332). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the rotation shaft having a penetrating hole of '333 to the hinge of '316 in order to allow a cable to pass between two hinged members.

20. For Claim 2, '316 teaches a two-shaft hinge having a rotation shaft (Fig. 3: 312) and an opening/closing shaft (Fig. 5: 321), comprising: a rotation torque unit (Fig. 3) in which a pair of rotation torque generating portions are provided on the rotation shaft, the rotation torque generating portion being assembled by putting a coil spring (Fig. 3: 315) around an outer periphery of the rotation shaft (312) and by abutting a fixing cam (313a, 313b) and a rotating cam (314a, 314b) on one end of the coil spring (315); and an opening/closing torque unit (Fig. 4) in which a plurality of opening/closing torque generating portions are provided on the opening/closing shaft (321), the opening/closing

torque generating portion being assembled by putting a coil spring (325) around the opening/closing shaft (321) and by abutting a fixing cam (323) and a rotating cam (324) on one end of the coil spring; wherein, the two-shaft hinge has a two-shaft structure in which an axial direction of the rotation shaft and an axial direction of the opening/closing shaft are assembled to a hinge housing to be perpendicular to each other (Fig. 2), the torque units which generate a sliding torque and a click torque at rotation and opening/closing operation function on the rotation shaft and the opening/closing shaft, and the opening/closing torque unit is assembled to either side or both right and left sides of the rotation torque unit. '316 does not teach the fixing cam and rotating cam on both ends of the coil spring for the opening/closing shaft. '316 does however teach the use of a fixing cam and rotating cam on both ends of the coil spring for the rotating shaft. It would have been obvious to one having ordinary skill in the art at the time the invention was made, to include a plurality of fixing cam and rotating cam elements on both ends of the coil spring, as it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.* See also, MPEP § 2144.05. However, '316 does not teach the rotation shaft having a penetrating hole. '333 teaches a hinge (Fig. 4) having a rotation shaft (33) having a penetrating hole (332). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the rotation shaft having a penetrating hole of '333 to the hinge of '316 in order to allow a cable to pass between two hinged members.

21. For Claims 3 and 4, '316 teaches the two-shaft hinge according to claim 1, wherein the sliding torque and the click torque are generated by abutting the fixing cam (313a, 323) and the rotating cam (314a, 324) in the plurality of rotation torque and opening/closing torque generating portions provided on the rotation shaft (312) and opening/closing shaft (321), and positions of a groove (concave) and a protrusion (convex) (grooves and protrusions seen in Fig. 3 and Fig. 5) of the cams used by the rotation shaft (312) and opening/closing shaft (321) by pair or a different number of cams are combined, whereby the rotation torque unit and opening/closing torque unit which incorporate with the plurality of rotation torque and opening/closing torque generating portions having different torque generation operations is formed, and the torque unit is assembled on the rotation shaft and opening/closing shaft (Fig. 2).

22. For Claim 5, '316 teaches the two-shaft hinge wherein a part of a cross section of the rotation shaft and the opening/closing shaft is formed to be a quadrangle or to have a major axis and a minor axis, which is other than a circle, and the rotation shaft and the opening/closing shaft having a shape which allows the fixing cams for rotation and opening/closing used in the rotation and the opening/closing torque generating portions to move in an axial direction of the rotation shaft and the opening/closing shaft but which inhibits them from rotating on a periphery of the rotation shaft, are employed. (See US 7,158,816 Column 6, Line 66 to Column 7, Line 20). Note that those of ordinary skill in the art would appreciate that a modification such as a mere change in shape of a prior art device is a design consideration within the skill of the art. *In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).*

23. For Claim 6, '316 teaches the two-shaft hinge according to claim 1, wherein a stopper mechanism (326, 316, 317) to restrict a rotation angle and an opening/closing angle of the rotation shaft and the opening/closing shaft is mounted so that a rotation range of the rotation shaft and the opening/closing shaft is restricted (See US 7,158,816 Column 10 for a description of the stopper mechanism).

24. For Claim 8, '316 does not teach the two-shaft hinge wherein a penetrably holed shaft in which a through-hole is provided at a center of the rotation shaft is used to enable a harness wiring. '333 teaches a hinge (Fig. 4) wherein *the* penetrably holed shaft (33) in which a through-hole (332) is provided at a center of the rotation shaft is used to enable a harness wiring (Column 3, Line 58). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the shaft (33) having a through-hole (332) to the hinge of '316 in order to allow for the passing of a cable to connect electrical components housed in the two hinged members.

25. For Claim 9, '316 teaches the two-shaft hinge according to claim 1, wherein a case (311) for the rotation shaft (312) and a case (322) for the opening/closing shaft (321) in each of which an outer periphery thereof partially has a groove or a deformed cross section other than a circle are fitted with or fixed to the rotating cams in each of which an outer periphery thereof has a protrusion or a deformed cross section, in order to effectively transmit a sliding torque force and a click torque force, which are generated in the rotating cams used on the rotation shaft and the opening/closing shaft. '316 teaches the case (322) of the opening/closing shaft (321) being deformed (as seen in Fig. 2), but is silent as to the case (311) for of the rotation shaft (312). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to utilize the same means for controlling the rotating cams to cause them to rotate with the case as taught for the opening/closing case (322) in order to control the rotating cams to rotate with the rotating case (311).

26. For Claim 10, '316 does not teach the two-shaft hinge according to claim 1, wherein the rotating cam used in the rotation torque generating portion is configured to be another member (taken to mean a bottom member of case 6) as a bottom portion to which the rotation torque unit is fitted and attached in the hinge housing, whereby reduction in a number of components, reduction in size, and improvement in strength of the hinge housing are achieved. '316 discloses the claimed invention except for the bottom rotating cam being another member. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a bottom member of the case wherein the surface has an integrated cam member, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). The examiner further notes that "whereby" clauses are given no weight if they express only a necessary result of the structure already recited in the body of claims (see MPEP 2111.04).

27. For Claim 11, '316 teaches the two-shaft hinge according to claim 1, wherein the rotation torque unit and the opening/closing torque unit are capable of being assembled as an independent unit, thereafter they are fitted and attached to or screwed into the hinge housing in which a means for fitting or screwing to fix is provided in advance.

Examiner notes that this would be considered to be a product-by-process claim due to the limitation "assembled". The patentability of the product does not depend on its method of production. Determination of patentability is based on the product itself. See MPEP 2113. "If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe,* 227 USPQ 964, 966 (Fed. Cir. 1985).

28. For Claim 12, '316 teaches the two-shaft hinge according to claim 1, wherein, for mounting and fixing the two-shaft hinge to a device chassis, a fixing base component (301) adhered to the rotation shaft (312) is added and the two-shaft hinge is fixed by the base, whereby the device chassis is designed easily.

29. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2003304316 herein referred to as '316 in view of Tseng et al. (US 6,587,333) herein referred to as '333 and further in view of Katoh (US 5,867,872) herein referred to as '872. (US 7,158,816) which claims foreign priority to the Japanese application of JP 2003304316 has been used as an approximate English translation of the Japanese document).

30. For Claim 7, '316 as modified by '333 does not teach the two-shaft hinge wherein a disc spring, a waved plate spring, or a thin plate spring is employed in place of the coil spring which generates an abutting force in the torque generating portions used in the rotation torque unit and the opening/closing torque unit, so that a size is reduced. '872 teaches the use of a disc spring (Fig. 2: 17) to press a rotating cam (16) against a fixed cam (12). It would have been obvious to one of ordinary skill in the art at the time of the

invention to modify the hinge of '316 as modified by '333, by replacing the coil spring of '316 with the disc springs of '872 in order to reduce the size of the spring member for use in compact electric devices.

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lu et al. (US 7,055,218), Sudo et al. (US 2005/0119023) and Higano et al. (US 6,948,217) all teach relevant hinge structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey O'Brien whose telephone number is (571)270-3655. The examiner can normally be reached on Monday through Friday 8:00am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Victor Batson can be reached on 571-272-6987. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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